

Anterior Vaginal Wall Tenderness (AVWT) as a Physical Symptom in Chronic Pelvic Pain

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ABSTRACT

Background and Objectives: Chronic pelvic pain is often difficult to diagnose and treat properly. Physicians called on to treat this problem may not be able to give a specific diagnosis. The aim of this study was to see whether the physical presence of anterior vaginal wall tenderness could help narrow down and elucidate diagnoses in a practice focusing on diagnosis and treatment of chronic pelvic pain.

Methods: The study cohort comprised 284 patients with chronic pelvic pain limited to gynecologic and lower urinary problems. Histories, physical examinations, and endoscopic procedures were performed on each patient. An analysis of this information was conducted.

Results: Of the chronic pelvic pain patients, 78% had endometriosis, 81% had interstitial cystitis, and 61% had both concurrently. The sensitivity of anterior vaginal wall tenderness (AVWT) in patients with interstitial cystitis was 95%, and in those with only endometriosis and no interstitial cystitis, the sensitivity was 17%. The positive predictive value for interstitial cystitis was 85%, and for endometriosis it was 67%.

Conclusions: Examination of the anterior vaginal wall with an empty bladder at the initial examination can lead one to suspect interstitial cystitis and possibly either concomitant or singular endometriosis and allow the physician to approach the workup accordingly.

Key Words: Interstitial cystitis, Endometriosis, Pelvic pain.

INTRODUCTION

Chronic pelvic pain (CPP) is any pain in the pelvic area that lasts 6 months or longer. This pain can be a symptom of other diseases, or it can be a condition in its own right. The workup can be a complex and difficult process to determine what is causing the pain; in fact, no specific cause may ever be discovered. Many women who experience this problem may not be able to identify a specific set of problems allowing for the diagnosis to be made.

Chronic pelvic pain has numerous presentations, and women with the same problem may exhibit different characteristics. Common symptoms include, but are not limited to, constant severe pelvic pain, intermittent pain, sharp or cramping pain, dull aching, or pressure. Dyspareunia is common, and if a woman has periods, progressive and severe dysmenorrhea is not uncommon. Many women miss work, have difficulty doing nonstrenuous exercises, and have difficulty sleeping. The level of pain can vary greatly and can contrast from mild to disabling. The occurrence of pain affects >9 million women in the United States.¹ It is believed that this entity accounts for 10% to 15% of referrals to gynecologists² and leads to >40% of all diagnostic laparoscopies performed by gynecologists.³

The more common gynecological problems that can be a source for chronic pelvic pain include endometriosis, pelvic floor muscle spasms, leiomyomata, pelvic congestion syndrome, chronic pelvic inflammatory disease, ovarian remnant problems, and painful bladder syndrome (interstitial cystitis, IC). The cause of this entity can often be attributed to both nongynecological and gynecological problems. Irritable bowel syndrome and other intestinal anomalies can cause chronic problems; psychological factors may, also, contribute to the pain.

High rates of anterior vaginal wall tenderness have been seen in individuals with IC, because the disease process, even in the early stages, involves an irritation of the bladder wall and affects the sensitivity of the bladder, occasionally without the patient having lower urinary tract symptoms. It might be possible that with a high number of patients with endometriosis and interstitial cystitis concurrently, there could be a high rate of anterior vaginal wall

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tenderness (ATWT) in those individuals with endometriosis.

The purpose of this investigation was to see if a common physical finding of anterior vaginal wall tenderness (AVWT) could help predict the possibility of the patient having interstitial cystitis, endometriosis, or both concomitantly. In past infertility studies, the chance of endometriosis in certain patient populations associated with patients having painful bladder syndrome was very high.⁴ It was postulated that in these populations a physical sign of IC might lead to the possibility of a large number of individuals with concurrent endometriosis. This study was, therefore, undertaken to see whether any relationship in AVWT was associated with multiple disease states in the woman with CPP. This study involved a chart review of patients with chronic pelvic pain limited to the gynecological and the lower urinary system, with other organic problems ruled out.

METHODS

Charts of women with chronic pelvic pain were evaluated between August 2002 and July 2008. Of these, patients >50 years old, menopausal patients <50 years old, patients attempting to become pregnant, those with nongynecological and nonlower urinary tract problems except those with myofascial pain or pelvic neuropathies, and those who had bilateral oophorectomies were excluded. Of the 436 patients remaining, only those who had had a laparoscopy or laparotomy and cystoscopy performed were included. The study cohort therefore included 284 patients. These patients were evaluated with detailed histories and physical examinations, the PUF questionnaire,⁵ visual analog pain indices,⁶⁻⁸ and investigation of any specific symptoms.

Physical examinations concentrated on the abdominal and pelvic examinations. Superficial myofascial discomfort of the lower abdominal wall was elicited and confirmed as superficial by Carnett's test.⁹ At the beginning of the vaginal examination, the examining fingers were pressed posterior over the rectal area to feel for possible rectal endometriosis and to elicit any discomfort or spasm. The sidewalls of the vaginal vault were gently probed with the fingers to feel for levator muscle pain or spasms, and pudendal neuropathy was explored manually. The examiner's fingers pressed on the anterior vaginal wall underlying the bladder after the patient had voided to elicit pain or tenderness [anterior vaginal wall tenderness (AVWT)].

All nongynecological and nonurological sources of pain were excluded. Urine cultures were performed to rule out urinary infections, and if necessary, an upper tract investigation was performed.

Laparoscopy was performed via a closed technique. Evaluation of the pelvis was done, and pathology was noted. Removal of lesions easily assessable to laparoscopic removal was performed by available methods including resection and cauterization of lesions by the CO₂ laser, by scissors, electrosurgery, and argon beam coagulation or Harmonic scalpel. Diagnosis of endometriosis was made by pathological diagnosis obtained by biopsy or excision or by visual means of "typical" peritoneal lesions of a black charcoal appearance, as reports of pathological correlation in the diagnosis of endometriosis of up to 93% to 97% has been confirmed on peritoneal lesions with a typical black "powder burn" appearance.^{10,11}

For this study, a diagnosis of painful bladder syndrome was made utilizing results from cystoscopy, the patient's symptoms, physical examination, and the PUF scores.⁴ The bladder was explored by cystoscopy utilizing sterile water as a distending media. Urinary structures were evaluated. The bladder was distended to 80cm of hydrostatic water pressure and allowed to equilibrate for 3 minutes to 4 minutes. Glomerulations, if present, were noted, and the numbers per quadrant were recorded. When the procedure was over, the sterile water was allowed to drain from the bladder.

RESULTS

Of the 284 patients investigated for chronic pelvic pain, 216 (78%) had endometriosis, 225 (81%) had interstitial cystitis, and 172 (61%) had both endometriosis and interstitial cystitis. **Table 1** provides patient findings. The PUF scores were highest in patients with IC as the purported cause of the CPP; these patients also had the highest average pain scores. In patients with IC, both those with IC only and those with both IC and endometriosis, AVWT was significantly higher than in those without IC. Symptoms of chronic pelvic pain including the pain level, dyspareunia, and dysmenorrhea (if patients still had a uterus) were recorded (**Table 1**). The sensitivity, which refers to identifying the patients who have the disease, in CPP patients with IC, was 95%. The sensitivity in patients with endometriosis was 93%; but the majority of the patients also had interstitial cystitis. When one looks at those individuals with only endometriosis, the sensitivity of predicting endometriosis by AVWT was 17%. The positive predictive value, referring to the chance that the positive

Table 1.
Patients with Chronic Pelvic Pain

Patients	No.	%	PUF	Pain (0-10)	Dyspareunia (0-10)	Dysmenorrhea (0-10)	Anterior Vaginal Wall Tenderness
Interstitial cystitis plus endo patients	172	61	19.8	5.2	7.5	8.0	94%
All interstitial cystitis patients	225	81	20.6	5.4	7.8	8.2	95%
All endo patients	216	78	18.1	5.1	5.8	7.7	93%
Interstitial cystitis only patients	53	19	23.1	5.8	8.1	7.8	96%
Endo only patients	44	15	11.5	5.0	6.7	7.5	39%
Other pathology	15	5	4.5	4.9	2.4	5.4	0%
Chronic pelvic pain	284	100	18.3	5.3	7.2	7.7	88%

test result will be correct, for interstitial cystitis was 85%. For endometriosis, both with interstitial cystitis and without other factors, was 67%.

DISCUSSION

Making a diagnosis of either interstitial cystitis or endometriosis is fraught with difficulty. Interstitial cystitis (IC)/painful bladder syndrome (PBS) requires exclusion of disease states with symptoms that overlap those of the painful bladder problem. After exclusion of many other possible problems and utilizing a history, a physical examination and verified questionnaires, a skilled physician can make the diagnosis of IC with a reasonable certainty. The diagnosis of endometriosis is also very difficult without actually seeing the disease process and getting histological evidence. Some physicians tell patients that endometriosis is the problem, which they base on only a history of pelvic pain with or without a cystic ovarian mass. Occasionally, doctors treat this pain with a GnRH analog, and many times achieve a temporary reduction in pain that often returns; but they have no firm diagnosis. Pain levels appear to be lower in patients with only endometriosis causing discomfort compared to those with only IC and no other factors. Since there is such a wide diversity in pain scores, utilization of this factor is not helpful in determining what is causing the pain process. In addition to these major problems, pain generation from myofascial problems and neuropathies can be additive or be singular problems. This is often implicated by practitioners not familiar with treating patients for pelvic pain, whatever the cause, for fear of "making them pelvic cripples."

Because of this difficulty, a thorough history and examination are necessary. Often, this will not lead to a conclusive diagnosis, but many diagnoses can be ruled out. Some inexperienced physicians will believe that every

point they learned about IC or endometriosis is necessary to have a definitive diagnosis, when often even a major part of the syndrome is missing. Ancillary testing such as endoscopy, a PSP,¹² or a procedure with a biopsy might be necessary. Laparoscopy is one of the most common procedures performed for pelvic pain by the gynecologist,³ and frequently bladder pain is not addressed by physicians because their diagnosis is clouded by a preconceived condition, such as an ovarian cyst, which may eventually turn out not to be involved in the discomfort. No matter what operative procedure is performed, including an oophorectomy, often the pain levels decrease for a short while before the pain resumes. Then, patients are referred to pain physicians who often are not familiar with painful bladder syndrome.

In most patients with IC and no other factors contributing to their CPP, physical findings of AVWT are usually present. In patients with endometriosis and no IC, the percentage of individuals with AVWT is much less than the percentage of those with IC or endometriosis and IC concurrently. The importance of a good history, physical examination, and ancillary procedures cannot be overemphasized; together they often portend the discovery of endometriosis prior to surgery for CPP. Occasionally, the patient can have good short-term treatment that does not require surgical intervention. The positive sensitivity of AVWT for interstitial cystitis (correctly identifying who has the interstitial cystitis) in this study was 95%. The positive sensitivity of AVWT for endometriosis was 83%, because a large number of individuals had both IC and endometriosis. Individuals with endometriosis and no interstitial cystitis as the cause of CPP included only 17 of 44 patients (39%) with a positive AVWT.

In a recent study of unexplained infertility patients with no other fertility factors noted, AVWT on vaginal exam-

ination was a reasonable predictor of endometriosis in the patient.¹³ The positive predictive value of finding endometriosis was 86%.¹³ Hudelist et al¹⁴ demonstrated that in patients with symptoms suggestive of endometriosis, the combination of a good clinical examination associated with a transvaginal ultrasound performed by a skilled individual combined with later surgical exploration could achieve the “non-surgical identification of ovarian, deep infiltrating disease of the bladder, the rectovaginal space, uterosacral ligaments, vagina, the pouch of Douglas (cul-de-sac) and rectum.”¹⁴ A new office procedure has been suggested for the diagnosis of endometriosis¹⁵: endometrial biopsies with pathological analysis after special staining. The sensitivity was 98%, the positive predictive value was 91%, and the negative predictive value was 96%.

CONCLUSION

Utilizing all the possibilities before surgery for determining the chances of a patient having endometriosis or interstitial cystitis/painful bladder syndrome prior to invasive tests can often make treatment easier and in some cases negate the need for extensive treatment protocols.

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